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Description

The invention relates to fluid couplings and is applicable, to a tube coupling particularly suited for use in high vacuum and pressure systems.

One type of coupling which has achieved widespread acceptance comprises a pair of coupling components having longitudinally extending fluid passageways and terminating in mating end faces each constituting a sealing face which is provided with an annular rib or sealing bead which extends outwardly and about the associated end. With the components oriented in face-to-face relationship, an annular metal sealing gasket is interposed between the sealing beads. Threaded nuts act to drive the coupling components together to cause the annular ribs to sealingly engage the gasket.

In order to properly locate the sealing gasket relative to the end faces, various gasket retainers have been proposed in the prior art. These retainers are shown, for example, in US-A-4,552,389; US-A-4,650,227; and US-A-4,838,583. The gasket retainers have been very satisfactory for their intended purpose. Recently, however, a modified form of the basic coupling design (EP-A-0439328, published on 31st July 1991) has presented difficulties with respect to the prior gasket retainers. In this recent coupling design, a separate anti-torque member is mounted inside the nut members in surrounding relationship with the ends of the sealing face. This anti-torque member acts to prevent transmission of torque to the coupling components, the sealing washer, or the associated piping during tightening of the nut members.

The presence of the anti-torque member can have the effect of increasing the overall external dimensions of the coupling. In an effort at keeping these external dimensions small, the spacings between the components is reduced as much as possible. As a consequence, it is somewhat difficult to use the more conventional gasket retaining devices. Further, with the conventional gasket retainer, it is necessary for the gasket to have a smaller outer diameter than the gasket required when a retainer is not used. Thus, two different gaskets must be stocked.

An object of the invention is to provide a gasket and retainer assembly which overcomes the noted problems and provides a gasket retainer which takes up only a small amount of space in the coupling assembly. Moreover, the gasket and retainer assembly may be such that the same gasket design is capable of use either with or without an associated retainer. Thus, only one gasket needs to be stocked to satisfy both retainer and non-retainer situations.

One object of the present invention is the provision of a tube coupling of the general type de-

scribed wherein the gasket and gasket retainer assembly is a highly simplified structure which can be fitted within an extremely small space within the coupling assembly.

A further object is the provision of a gasket retainer assembly of the type described wherein the gasket itself can be used either with or without a retainer, thereby limiting the need for gaskets of different sizes as would have been required with the prior gasket retainer assemblies.

Yet another, and more limited object of the invention, is the provision of a gasket retainer assembly wherein the gasket retainer engages radially inward of the maximum outer periphery of the gasket.

In particular, the invention comprises a fluid coupling of the type having first and second generally cylindrical coupling components including fluid passageways extending longitudinally therethrough. The components have opposed radial inface with sealing ribs extending axially therefrom towards each other with an annular sealing gasket interposed therebetween. The coupling further includes nut members for moving the components into a closely spaced substantially coaxial relationship such that the sealing ribs sealingly engage opposite face areas of the gasket. A retainer device maintains the gasket in a predetermined located position relative to the end face of one of the components in a substantially coaxial relationship therewith. According to the invention, the retainer has a generally sleeve-like body which defines a retained portion closely received over the one component at an area spaced axially rearward from the associated radial end face. Also, according to the invention, the retainer has a plurality of axially extending fingers circumferentially spaced about the retaining portion and extending axially outward beyond the associated radial end face. Preferably, the diameter of the outer periphery of the sealing gasket is at least slightly greater than the inner diameter of the sleeve-like body. Also, according to the invention recesses are formed in the outer periphery. The recesses are located and sized to closely receive the axially extending leg portions to thus hold the gasket in aligned relationship with the end face.

Because of the relationship between the gasket and the gasket retainer, the outer diameter of the gasket can be sized to closely correspond to the inner diameter of the nut members so that centering of the gasket and the nut member can be achieved even when a gasket retainer is not used.

In accordance with another more limited aspect of the invention, the gasket retainer and the gasket are maintained in a unitary assembled position by having the ends of the fingers provided with a catch means for preventing the gasket from being

axially removed therefrom. This permits the gasket and the retainer to be handled as a single unit during installation and removal.

Preferably, the retainer also has detents for frictionally engaging the associated coupling components so that the gasket and retainer are frictionally retained thereon. It is also contemplated that, if desired, catch means can comprise inwardly bent tab portions at the free ends of the fingers.

In the preferred embodiment, the retainer is formed from a relatively thin metal having a relatively high degree of resiliency. The frictional detents can thus resiliently engage the coupling body as a result of elastic deformation of the sleeve-like body of the retainer. No special spring latches or similar connecting structure is required.

The invention is further described, by way of example, with reference to the accompanying drawings, wherein:

Fig. 1 is a longitudinal sectional view taken through a coupling assembly formed in accordance with a preferred embodiment of the invention;

Fig. 2 is a greater enlarged view of the circled area of Fig. 1;

Fig. 3 is an exploded perspective view of the gasket and gasket retainer elements; and

Fig. 4 is an exploded pictorial view of all elements of the coupling except for the gasket and gasket retainer.

Referring to the drawings Figs. 1 and 4 show the overall arrangement of a tube coupling assembly formed in accordance with the present invention and comprising first and second coupling components 12 and 14 which are held in aligned and connected position by threaded nut members 16 and 18.

In the preferred embodiment, the coupling components 12 and 14 are substantially identical to one another and are formed as separate elements independent of the nut members 16 and 18. They could, under certain circumstances, be combined with the nut members or formed as integral portions of related structures, such as valves, manifolds, or the like. As illustrated, each of the coupling members 12, 14 comprises a substantially cylindrical main body 20 with a through-flow passage 22 extending axially therethrough. A radially extending flange 24 is formed adjacent an enlarged end 26 which has a sealing end face 28. Referring to Fig. 2, each of the end faces 28 includes a circumferentially extending bead or rib 30. The bead or rib 30 acts as a sealing surface for engagement with a metal gasket 32. The particular preferred details of the rib 30 are described more fully in European Patent Application No. 91 305879.8.

By tightening the threaded nut member 16, 18, axial forces are applied to the coupling components 12, 14 to cause their sealing ribs 30 to engage into the opposite faces of the annular metal gasket 32. The nut member 16 has a counterbored section 34 which is sized to closely receive the flange 24 of the coupling component 12 to align the coupling component 12 and to apply the necessary axially directed forces. Similarly, positioned between a radially extending shoulder 36 on nut member 18 and the flange 24 of coupling component 14 is a sleeve-like, substantially cylindrical anti-torque member 40. The anti-torque member is described more fully in EP-A-0439328. The anti-torque member 40 is best illustrated in Fig. 4. It is arranged to prevent torque from being applied from the nut members 16, 18 to the coupling components 12, 14 to eliminate the possibility of producing rotation of these coupling components relative to each other, the associated system pipe, or the gasket 32. The member 40 has a stepped diameter, axially extending opening 42 which includes a first section 42a which is sized so as to freely receive the cylindrical portion 20 of the coupling component 14. This relationship is illustrated in Fig. 1. The second section 42b of the opening 42 is sized so as to closely receive the flange 24 of coupling component 14. The shoulder face 44 between the cylindrical sections 42a and 44b is arranged to engage the flange 24 of coupling component 14 in the manner shown to apply axial forces thereto. The exterior cylindrical section 46 of anti-torque member 40 is sized so as to be freely and closely received within the cylindrical interior 18a of nut member 18.

As best seen in Fig. 4, the anti-torque member 40 further has a pair of diametrically opposed, axially extending fingers or tabs 50. A corresponding pair of similar tabs 52 extends from the inner end of the nut member 16. These tabs 50, 52 inter-engage as illustrated in Fig. 1. Consequently, during the tightening of the nut members 16, 18, forces capable of producing relative rotation cannot be applied to the coupling members 12, 14. That is, the inter-engagement of the tabs 50, 52 assures that the nut member 16 and the anti-torque member 40 are located together in a manner which does not allow torque to be transmitted to the coupling components 12, 14.

As described more fully in the aforementioned EP-A-0439328, a coil spring member 54 is preferably provided about the reduced diameter right-hand end of the anti-torque member 40. This compression spring 54 assists in assembly and make-up of the coupling. In particular, it maintains the anti-torque member 40 in an axially outwardly biased position relative to the nut member 18 such that the tabs 50 are clearly visible to the assembler

so that they can be properly engaged with the tabs 52 as the nut members 16, 18 are threaded together at the start of the make-up operation.

As previously discussed, the presence of the anti-torque member 40 tends to increase the over-
all size of the coupling or to reduce the space
available in the interior for use of gasket retainers if
such are desired. The typical prior gasket retainers
as shown, for example in US-A-4,552,389; US-A-
4,650,277; and US-A-4,838,583 are such that, when
used, they require a different diameter gasket than
those gaskets used when a retainer is not present.
The gasket and retainer assembly of the present
invention allows the use of a gasket retainer when
the anti-torque member is used. Also, the gasket
retainer of the coupling according to the invention
uses a gasket which can function adequately also
when a retainer is not used. That is, the outer
diameter of the gasket can be the same as is
required for non-retainer use. As specifically shown
in Figs. 2 and 3, the gasket and retainer assembly
of the coupling according to the invention com-
prises a sleeve-like cylindrical retainer 60 which
has a main circumferentially continuous body sec-
tion 62 which has an inner diameter that is only
slightly larger than the diameter of the end section
26 of the coupling component 12. As illustrated in
Fig. 2, this allows the retainer 60 to be received on
the end of the coupling component 12 in surround-
ing relationship to the sealing face 28. Preferably,
the retainer 60 is arranged to be frictionally en-
gaged with and retained on the end portion 26 by,
for example, a pair of detent or bead-like deforma-
tions 64 which are formed at diametrically opposite
sides of the body portion 62 to resiliently and
frictionally engage the outer surface of section 26
of the coupling component 12.

To assure proper gripping by the detent or
bead-like deformations 64, the body 62 of the
retainer 60 is preferably formed from a resilient
metal. For example, in the present embodiment,
the retainer 60 is formed from stainless steel with a
wall thickness in the range of about 0.10mm to
about 0.20mm (about 0.004 inch to about 0.008
inch). The sleeve-like body 62 of the retainer 60
can thus elastically deflect radially to assume a
non-circular shape to produce gripping by the de-
tents 64.

Extending axially from the right-hand end of
body portion 62 (as viewed in Figs. 2 and 3) is a
plurality of fingers or tab-like formations 66. Cor-
responding grooves or slots 68 are formed about
the periphery of the gasket 32. The width and
location of the recesses 68 are such as to exactly
correspond to the width and location of the fingers
66. Additionally, the major diameter of the gasket
32 is preferably substantially equal to the outer
diameter of the body section 62 of the gasket

retainer 60. Thus, when the gasket 32 is positioned
in the assembled relationship on the fingers 66, the
tips or outer end portions of the fingers 66 can be
deflected radially inward to thus hold the gasket 32
in position on the retainer 60. Thus, the gasket 32
and the retainer 60 are a unitary assembly which
facilitate installation and mounting of the gasket in
position on the coupling components 12 or 14. In
addition, the relationship between the gasket 32
and retainer 60 remains constant irrespective of
removal or replacement of the assembly.

The invention has been described with refer-
ence to the preferred and alternative embodiment.
Modifications and alterations are included in so far
as they come within the scope of the claims.

Claims

1. A fluid coupling comprising first and second
substantially cylindrical coupling components
(12,14) having fluid passageways (22) extend-
ing longitudinally thereof and having opposed
radial end faces (28) including sealing ribs (30)
extending axially therefrom towards each other
with an annular sealing gasket (32) interposed
therebetween, nut means (16,18) for moving
said components (12,14) into a closely-spaced
substantially coaxial relationship such that said
sealing ribs (30) sealingly engage opposite
face areas of said gasket (32), and a retainer
(60) for maintaining said gasket (32) in a pre-
determined located position relative to the end
face of one (12) of said components in a
substantially coaxial relationship therewith, said
retainer (60) having a sleeve-like body (62)
defining a retaining portion closely received
over said one component (16) at an area there-
of spaced axially rearward from the associated
radial end face (28), and said retainer (60) also
having a plurality of axially extending fingers
(66) circumferentially spaced about said
sleeve-like body (62) and extending axially out-
wardly beyond said associated radial end face
(28), and said annular sealing gasket (32) hav-
ing recesses (68) in its outer periphery of a
diameter at least slightly greater than the inner
diameter of said sleeve-like body (62) with
recesses (68) formed in said outer periphery,
said recesses (68) receiving said axially ex-
tending fingers (66), whereby said gasket (32)
is maintained in aligned relationship with said
end face (28).
2. A fluid coupling as claimed in claim 1, in which
the diameter of the outer periphery of said
sealing gasket (32) is at least slightly greater
than the inner diameter of said sleeve-like
body (62).

3. A fluid coupling as claimed in claim 2, wherein the maximum diameter of said gasket (60) is substantially equal to the maximum outer diameter of said sleeve-like body (62). 5
4. A fluid coupling as claimed in claim 1, 2 or 3, wherein said sleeve-like body (62) is circumferentially continuous and includes detents (64) for frictionally engaging said one component (12) at circumferentially spaced locations. 10
5. A fluid coupling as claimed in claim 4, wherein said cylindrical body (62) is formed of a relatively thin and resilient metal capable of elastically deforming in the radial direction to produce frictional engagement of said detents (60) with said one component (12). 15
6. A fluid coupling as claimed in any of claims 1 to 5, wherein said fingers (66) are provided with catch means for preventing said gasket (32) from being removed axially therefrom. 20
7. A fluid coupling as claimed in claim 6, wherein the free ends of said fingers (66) extend radially inwardly to form said catch means. 25
8. A fluid coupling as claimed in any of claims 1 to 7, wherein said fingers (66) are aligned with said sleeve-like body (62). 30
9. A fluid coupling as claimed in claim 8 wherein said fingers (66) are an extension of said sleeve-like body (62) and are integral therewith. 35
10. A fluid coupling as claimed in any of claims 1 to 9, wherein said fingers (66) are located at uniformly spaced locations about said sleeve-like body (62). 40
11. A fluid coupling as claimed in any of claims 1 to 10, wherein said fingers (66) are each of uniform width and wherein said recesses (68) are sized to closely receive said fingers (66). 45
12. A fluid coupling as claimed in any of claims 1 to 11, wherein said recesses (68) are grooves which open radially outwardly. 50
13. A fluid coupling as claimed in any of claims 1 to 12, wherein there are at least three of said recesses (68). 55
14. A fluid coupling comprising first and second substantially cylindrical coupling components (12,14) having fluid passageways (22) extending longitudinally thereof and having opposed

radial end faces (28) including sealing beads (30) extending axially therefrom toward each other with an annular sealing gasket (32) interposed therebetween, means for moving said components (12,14) into a closely-spaced substantially coaxial relationship such that said sealing beads (30) sealingly engage opposite face areas of said gasket (32), and a retainer (60) for maintaining said gasket (32) in a predetermined located position relative to the end face of one (12) of said components in a substantially coaxial relationship therewith, said retainer (60) having a substantially cylindrical body (62) including a retaining portion of sleeve-like configuration closely received over said one component (12) at an area thereof spaced axially rearward from the associated radial end face (30), and said retainer (60) also having a plurality of axially extending leg portions (66) circumferentially spaced about said cylindrical body (62) and extending axially outward about said associated radial end face (30) and said annular sealing gasket (32) having an outer periphery with recesses (68) formed therein and receiving said axially extending leg portions (66) to maintain said gasket (32) in aligned relationship with said end face.

Patentansprüche

1. Fluidkupplung, umfassend eine erste und eine zweite im wesentlichen zylindrische Kupplungskomponente (12, 14) mit Fluidkanälen (22), die in Längsrichtung davon verlaufen und gegenüberliegende radiale Endflächen (28) mit Dichtungsrippen (30) aufweisen, die axial davon aufeinander zu verlaufen, wobei eine ringförmige Dichtung (32) dazwischen angeordnet ist, Muttern (16, 18) zum Bewegen der genannten Komponenten (12, 14) in eine eng beieinanderliegende, im wesentlichen koaxiale Beziehung zueinander, so daß die genannten Dichtungsrippen (30) dichtend in gegenüberliegende Flächenbereiche der genannten Dichtung (32) eingreifen, und ein Haltemittel (60) zum Halten der genannten Dichtung (32) in einer vorbestimmten Position relativ zur Endfläche von einem (12) der genannten Komponenten in einer im wesentlichen koaxialen Beziehung damit, wobei das genannte Haltemittel (60) einen hülsenähnlichen Körper (62) aufweist, der einen Halteabschnitt definiert, der eng von der genannten einen Komponente (16) in einem Bereich dieser Komponente aufgenommen wird, der von der zugehörigen radialen Endfläche (28) axial nach hinten beabstandet ist, und wobei das genannte Haltemittel (60) auch eine Mehrzahl von axial verlaufenden Fingern (66)

- aufweist, die umfangsmäßig um den genannten hülsenähnlichen Körper (62) beabstandet sind und axial nach außen über die genannte zugehörige radiale Endfläche (28) hinaus verlaufen, und wobei die genannte ringförmige Dichtung (32) Ausnehmungen (68) an ihrem Außenumfang aufweist, die einen Durchmesser haben, der wenigstens etwas größer ist als der Innendurchmesser des genannten hülsenähnlichen Körpers (62), wobei Ausnehmungen (68) in dem genannten Außenumfang ausgebildet sind, wobei die genannten Ausnehmungen (68) die genannten axial verlaufenden Finger (66) aufnehmen, so daß die genannte Dichtung (32) in einer ausgerichteten Beziehung zu der genannten Endfläche (28) gehalten wird.
2. Fluidkupplung nach Anspruch 1, bei der der Durchmesser des Außenumfangs der genannten Dichtung (32) wenigstens etwas größer ist als der Innendurchmesser des genannten hülsenähnlichen Körpers (62).
 3. Fluidkupplung nach Anspruch 2, wobei der maximale Durchmesser der genannten Dichtung (60) im wesentlichen gleich dem maximalen Außendurchmesser des genannten hülsenähnlichen Körpers (62) ist.
 4. Fluidkupplung nach Anspruch 1, 2 oder 3, wobei der genannte hülsenähnliche Körper (62) umfangsmäßig endlos ist und Eindrücke (64) für einen reibungsmäßigen Eingriff der genannten einen Komponente (12) an umfangsmäßig beabstandeten Stellen aufweist.
 5. Fluidkupplung nach Anspruch 4, wobei der genannte zylindrische Körper (62) aus einem relativ dünnen und elastischen Metall ausgebildet ist, das in der Lage ist, sich in radialer Richtung elastisch zu verformen, um einen reibungsmäßigen Eingriff der genannten Eindrücke (60) mit der genannten einen Komponente (12) zu erzeugen.
 6. Fluidkupplung nach einem der Ansprüche 1 bis 5, wobei die genannten Finger (66) mit einem Sperrmittel versehen sind, um zu verhindern, daß die genannte Dichtung (32) axial davon entfernt werden kann.
 7. Fluidkupplung nach Anspruch 6, wobei die freien Enden der genannten Finger (66) radial nach innen laufen, um das genannte Sperrmittel zu bilden.
 8. Fluidkupplung nach einem Ansprüche 1 bis 7, wobei die genannten Finger (66) auf den genannten hülsenähnlichen Körper (62) ausgerichtet sind.
 9. Fluidkupplung nach Anspruch 8, wobei die genannten Finger (66) eine Verlängerung des genannten hülsenähnlichen Körpers (62) und einstückig mit diesem verbunden sind.
 10. Fluidkupplung nach einem der Ansprüche 1 bis 9, wobei sich die genannten Finger (66) an gleichmäßig voneinander beabstandeten Stellen um den genannten hülsenähnlichen Körper (62) befinden.
 11. Fluidkupplung nach einem der Ansprüche 1 bis 10, wobei die genannten Finger (66) jeweils eine einheitliche Breite aufweisen und wobei die genannten Ausnehmungen (68) so bemessen sind, daß sie die genannten Finger (66) eng aufnehmen.
 12. Fluidkupplung nach einem der Ansprüche 1 bis 11, wobei die genannten Ausnehmungen (68) Nuten sind, die radial nach außen öffnen.
 13. Fluidkupplung nach einem der Ansprüche 1 bis 12, wobei wenigstens drei der genannten Ausnehmungen (68) vorhanden sind.
 14. Fluidkupplung, umfassend eine erste und eine zweite im wesentlichen zylindrische Kuppelungskomponente (12, 14) mit Fluidkanälen (22), die in Längsrichtung davon verlaufen und gegenüberliegende radiale Endflächen (28) mit Dichtungswulsten (30) aufweisen, die axial davon aufeinander zu verlaufen, wobei eine ringförmige Dichtung (32) dazwischen angeordnet ist, Mittel (16, 18) zum Bewegen der genannten Komponenten (12, 14) in eine eng beieinanderliegende, im wesentlichen koaxiale Beziehung zueinander, so daß die genannten Dichtungswulste (30) dichtend in gegenüberliegenden Flächenbereiche der genannten Dichtung (32) eingreifen, und ein Haltemittel (60) zum Halten der genannten Dichtung (32) in einer vorbestimmten Position relativ zur Endfläche von einem (12) der genannten Komponenten in einer im wesentlichen koaxialen Beziehung damit, wobei das genannte Haltemittel (60) einen im wesentlichen zylindrischen Körper (62) aufweist, der einen Halteabschnitt von hülsenähnlicher Konfiguration aufweist, der eng über die genannte eine Komponente (12) in einem Bereich derselben aufgesteckt wird, der von der zugehörigen radialen Endfläche (30) axial nach hinten beabstandet ist, und wobei das genannte Haltemittel (60) auch eine Mehrzahl von axial verlaufenden Schenkelabschnitten (66)

aufweist, die umfangsmäßig um den genannten zylindrischen Körper (62) verteilt sind und axial nach außen um die genannte zugehörige radiale Endfläche (30) verlaufen, und wobei die genannte ringförmige Dichtung (32) einen Außenumfang mit darin ausgebildeten Ausnehmungen (68) aufweist und die genannten axial verlaufenden Schenkelabschnitte (66) aufnimmt, um die genannte Dichtung (32) in einer ausgerichteten Beziehung zu der genannten Endfläche zu halten.

Revendications

1. Raccord de tuyaux à fluide comportant un premier et un deuxième composants de couplage substantiellement cylindrique (12, 14) ayant un passage à fluide (22) s'étendant longitudinalement par rapport à ceux-ci et ayant des faces d'extrémité radiales opposées (28) comprenant des nervures de renforcement d'étanchéité (30) s'étendant axialement de à l'un vers l'autre avec un joint d'étanchéité annulaire (32) interposé entre eux, des moyens d'écrou (16,18) pour déplacer lesdits composants (12,14) en une relation coaxiale substantiellement étroitement espacée de sorte que lesdites nervures de renforcement d'étanchéité (30) s'engagent de manière étanche dans les zones de face opposées dudit joint (32), et un logement (60) pour maintenir ledit joint (32) dans une position établie prédéterminée par rapport à la face d'extrémité de l'un (12) desdits composants dans une relation substantiellement coaxiale avec ce dernier, ledit logement (60) ayant un corps en forme de manchon (62) définissant une partie de retenue reçue sur ledit un composant (16) sur la zone de celui-ci espacé axialement vers l'arrière depuis la face d'extrémité radiale associée (28), et ledit logement (60) ayant également une pluralité de dents (66) s'étendant axialement, espacée de manière circonférentielle autour dudit corps en forme de manchon (62) et s'étendant axialement vers l'extérieur au-delà de ladite face d'extrémité radiale associée (28), et ledit joint d'étanchéité annulaire (32) ayant des encoches (68) dans sa périphérie extérieure d'un diamètre au moins légèrement supérieur au diamètre intérieur dudit corps en forme de manchon (62) avec des encoches (68) formées dans ladite périphérie extérieure, lesdites encoches (68) recevant lesdites dents (66) s'étendant axialement (66), de sorte que ledit joint (32) soit maintenu dans une relation alignée avec ladite face d'extrémité (28).
2. Raccord de tuyaux à fluide selon la revendication 1, dans lequel le diamètre de la périphérie extérieure dudit joint d'étanchéité (32) est au moins légèrement supérieur au diamètre intérieur dudit corps en forme de manchon (62).
3. Raccord de tuyaux à fluide selon la revendication 2, dans lequel le diamètre maximum dudit joint (60) est substantiellement égal au diamètre extérieur maximum dudit corps en forme de manchon (62).
4. Raccord de tuyaux à fluide selon la revendication 1, 2 ou 3, dans lequel le corps en forme de manchon (62) est de manière circonférentielle continu et comprend des goujons (64) pour l'enclenchement par friction dudit un composant (12) dans des emplacements espacés de manière circonférentielle.
5. Raccord de tuyaux à fluide selon la revendication 4, dans lequel ledit corps cylindrique (62) est formé dans un métal relativement fin et élastique capable de se déformer de manière élastique dans le sens radial afin de réaliser l'enclenchement frictionnel desdits goujons (60) avec ledit un composant (12).
6. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 5, dans lequel lesdites dents (66) sont dotées de moyen de cran d'arrêt pour empêcher ledit joint (32) d'être retiré axialement de là.
7. Raccord de tuyaux à fluide selon la revendication 6, dans lequel les bouts libres desdites dents (66) s'étendent radialement vers l'intérieur pour former lesdits moyens de cran d'arrêt.
8. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 7, dans lequel lesdites dents (66) sont alignées par rapport audit corps en forme de manchon (62).
9. Raccord de tuyaux à fluide selon la revendication 8 dans lequel les dents (66) sont une extension dudit corps en forme de manchon (62) et fait partie intégrante de ce dernier.
10. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 9, dans lequel lesdites dents (66) se trouvent à des emplacements espacés uniformément autour dudit corps en forme de manchon (62).
11. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 10, dans lequel

lesdites dents (66) sont chacune d'une largeur uniforme et dans lequel lesdites encoches (68) sont dimensionnées afin de recevoir étroitement lesdites dents (66).

- 5
12. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 11, dans lequel lesdites encoches (68) sont des rainures qui s'ouvrent radialement vers l'extérieur.
- 10
13. Raccord de tuyaux à fluide selon l'une quelconque des revendications 1 à 12, dans lequel se trouve au moins trois desdites encoches (68).
- 15
14. Raccord de tuyaux à fluide comportant un premier et un deuxième composants de couplage substantiellement cylindrique (12, 14) ayant un passage de fluide (22) s'étendant longitudinalement par rapport à ceux-ci et 20 ayant des faces d'extrémité radiales opposées (28) comprenant des nervures de renforcement d'étanchéité (30) s'étendant axialement de là l'un vers l'autre avec un joint d'étanchéité annulaire (32) interposé entre eux, des moyens 25 pour déplacer lesdits composants (12,14) en une relation coaxiale substantiellement étroitement espacée de sorte que lesdites nervures de renforcement d'étanchéité (30) s'engagent de manière étanche dans les zones de face 30 opposées dudit joint (32), et un logement (60) pour maintenir ledit joint (32) dans une position établie prédéterminée par rapport à la face d'extrémité de l'un (12) desdits composants dans une relation substantiellement coaxiale 35 avec ce dernier, ledit logement (60) ayant un corps substantiellement cylindrique (62) comportant une partie de retenue de configuration en forme de manchon reçue étroitement sur ledit un composant (12) sur une zone de celui-ci 40 espacée axialement vers l'arrière depuis la face d'extrémité radiale associée (30), et ledit logement (60) ayant également une pluralité de dents (66) s'étendant axialement espacée de manière circonférentielle autour dudit corps cylindrique (62) et s'étendant axialement vers 45 l'extérieur autour de ladite face d'extrémité radiale associée (30), et ledit joint d'étanchéité annulaire (32) ayant une périphérie extérieure avec des encoches (68) formées dedans et recevant lesdites parties de dent (66) s'étendant axialement pour maintenir ledit joint (32) dans une relation alignée avec ladite face d'ex- 50 trémité.
- 55

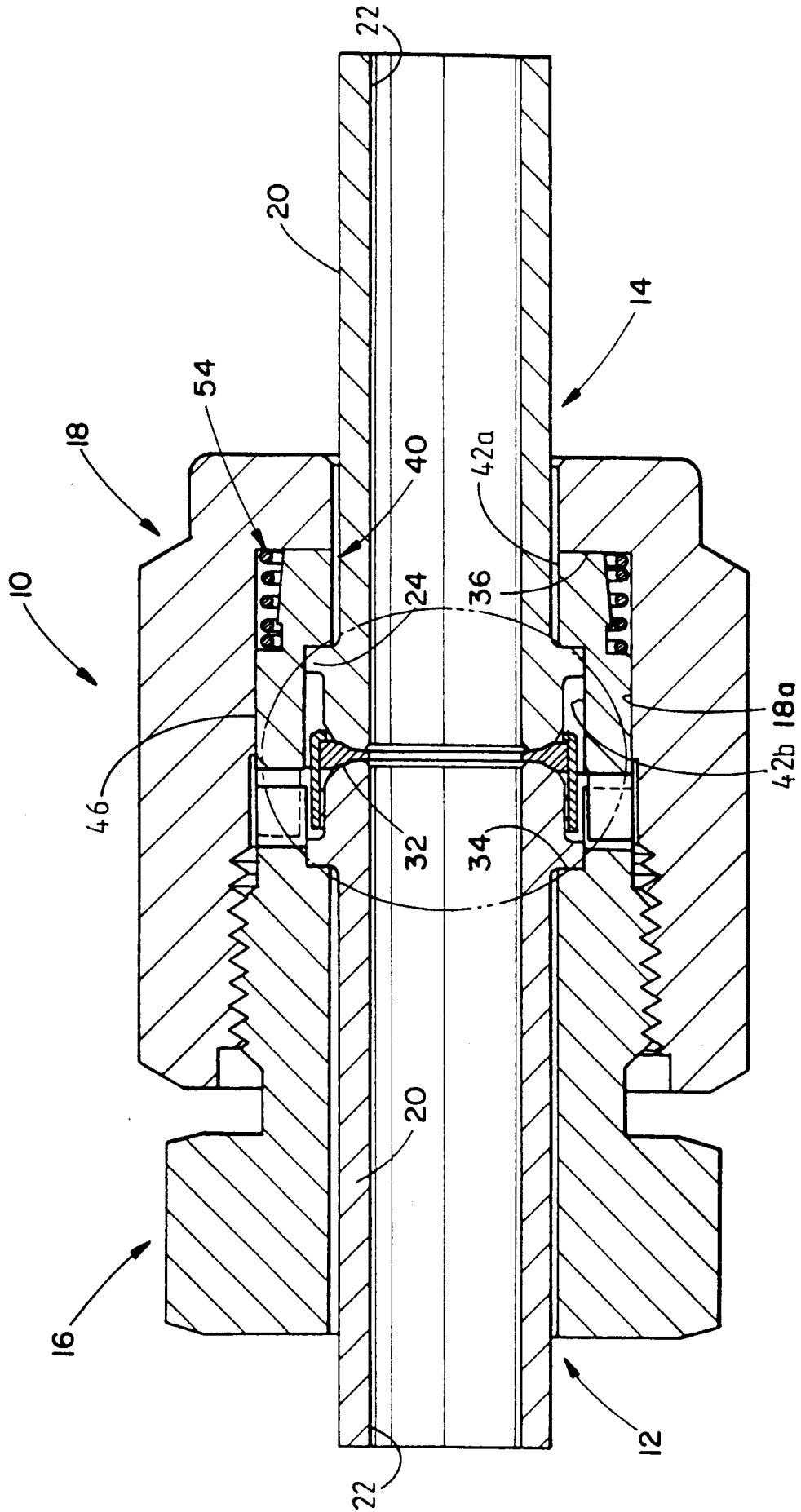


FIG. 1

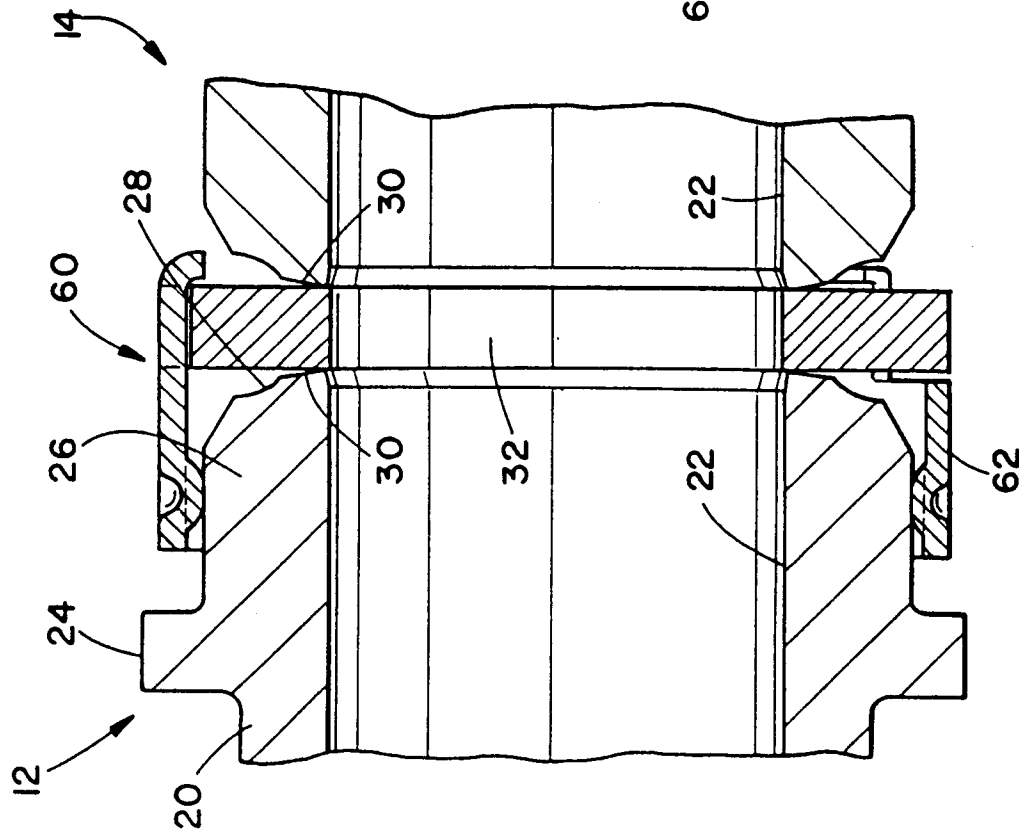


FIG. 2

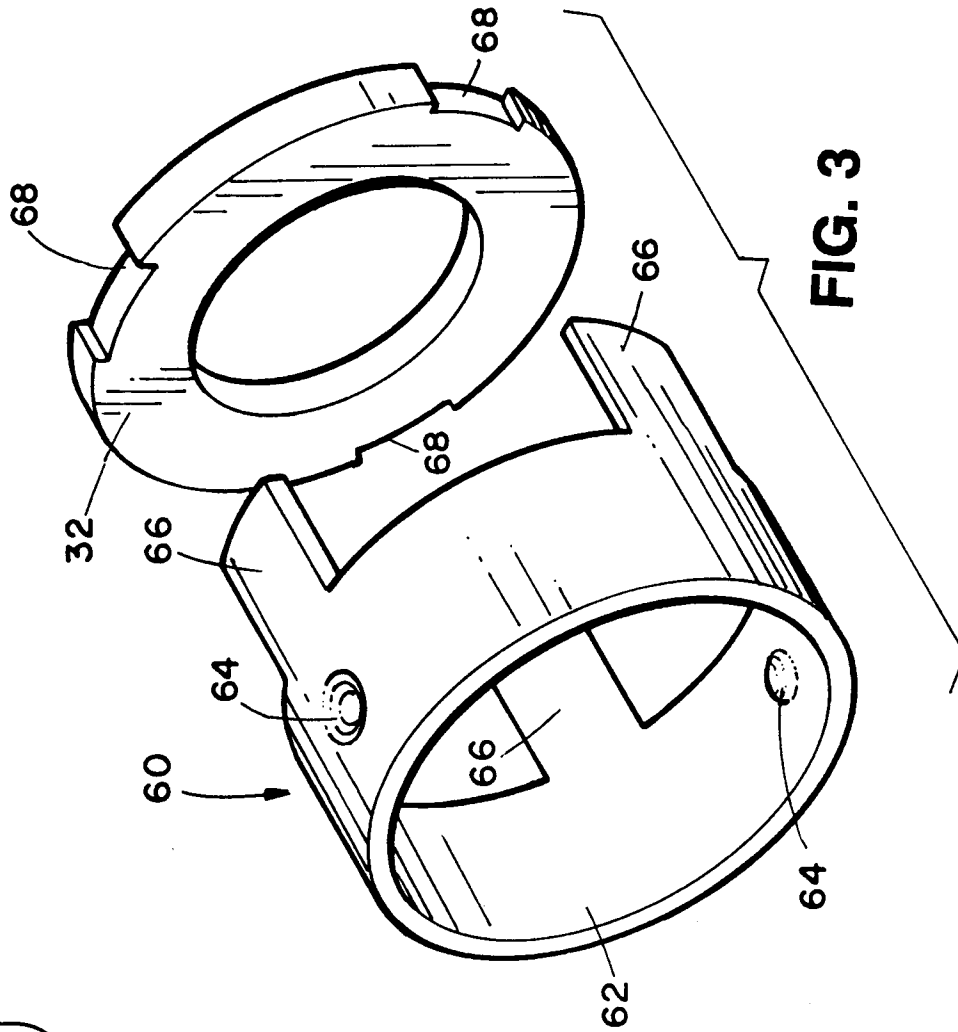


FIG. 3

